

certain inconsistencies as to form. In this regard, claim 11 has been amended and now depends from claim 10 rather than claim 9. In claim 13 "sections" has been amended to "section".

With respect to claim 8 and the rejection under 35 USC §112 for lack of antecedent, claim 8 has been amended to depend from claim 6 and claim 6 has been amended and now recites that the casing includes a cylindrical portion in addition to the core including a cylindrical portion. Accordingly, an antecedent is provided for both of these two elements and the rejection of claim 8 is overcome.

Claims 1-3 and claims 6-9 have been rejected under 35 USC 102(b) as being anticipated by Figert ('233). Claims 1-6 and 9 have been rejected under 35 USC 102(b) as being anticipated by JP 8-86542. These references have been carefully studied and, applicant, with respect, disagrees with these bases of rejection for the reasons which follow.

Claim 1 recites that the filter drier includes a casing having an inner surface, a molded core formed from dessicant and a binder and being disposed in the casing and having an outer surface and holding means between said casing inner surface and said core outer surface for holding the core in place, the holding means including at least one preformed protrusion on the casing engaging the outer surface of the core to inhibit axial movement of the core.

Figert does not disclose a holding means of this character between a core outer surface and a casing inner surface. To the contrary, it appears that the casing is completely separate from the core.

JP 8-86542 discloses a casing formed to a preformed core by a magnetic-forming of the casing to the preformed concavo-convex body of the core. FIG. 2 of JP 8-86542 shows an absorbent core 5A is formed with a concavo-convex outer surface configuration 35 and the casing 4A is formed into the concavo-convex outer surface configuration by a magnetic forming method. The magnetic forming circuitry is shown in FIG. 3. FIG. 4, as understood, shows a simplified structure 32 which includes a preformed core having a preformed concavo-convex surface and an axis 30. The preformed core is placed in a cylindrical casing 28a and subjected to a magnetic force from a coil 25 which makes the metal body 28a conform to the preformed core. This is completely different from molding a core into a casing having a preformed protrusion.

Accordingly, claim 1 is believed to be allowable.

Claim 3, rewritten as an independent claim, recites that the holding means includes bonding means between the inner surface of the casing and the outer surface of the core to inhibit axial movement of the core, the bonding means being provided by the desiccant core binder. A holding means of this character is not disclosed in Figert or JP 8-86542.

Figert makes no mention of a holding means provided by the bonding capability of the binder of the dessicant core. Rather, Figert discloses a preformed core held in place by conventional means such as end plates and a spring. The core is free of the casing rather than bonded to it.

Japanese 8-86542 likewise does not indicate a core molded to a casing but rather a casing that is formed to the core by a magnetic forming method after the core is set. There is no disclosure or suggestion of dessicant binding providing a bonding of the core to the casing.

Claim 3 is therefore believed to be allowable.

The remaining claims depend from claim 1 directly or indirectly and recite additional features. For example, claim 4 recites that the protrusion is circular and extends into the outer surface of the core; claim 5 recites that the casing includes a cylindrical end portion and funnel shaped end portions; claim 6 recites that the casing and the core include a cylindrical portion; claim 7 recites that the core includes a frusto-conical portion; claim 8 recites that the core is bonded to the cylindrical portion of the casing by the molded core binder and claim 9 recites that the core is formed from molded desiccant and a binder, the binder providing at least part of the holding means.

The prior art does not disclose these features on a filter-drier having the character defined in claim 1 and these claims are believed to be allowable.

Claim 15 has been added to provide applicant with the protection to which he is believed entitled. Claim 15 is similar to claim 1, as amended, except that the holding means between the casing inner and said core outer surface is recited as being provided by at least one of the molded core binder bonding with the casing and a preformed protrusion provided by the casing.

As discussed above, Figert does not disclose a holding means between a core outer surface and a casing inner surface. To the contrary, it appears that the casing is separate from the core.

Japanese 8-86542 likewise does not indicate a core molded to a casing but rather a casing is formed to the core by a magnetic forming method after the core is set.

Accordingly, claim 15 is believed to be allowable.

Claims 16, 17 and 18 depend from claim 15 and recite respectively that the holding means is provided by a preformed protrusion, the core bonding and a combination of the two.

The prior art does not disclose these features in a filter-drier having the character defined in claim 15 and these claims are believed to be allowable.

In view of the above, all of the presently submitted claims are believed to be allowable and a formal Notice of Allowance is courteously solicited.

Respectfully submitted,

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PATENT

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APPENDIX TO AMENDMENT A
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT:

Line 3, after "discharging" insert --refrigerant--.

, after "core" add --, formed from dessicant and a binder, and--.

Line 4, delete "said", three places, and substitute, --the--.

, after "outlet" add --and receiving refrigerant flow
therethrough--.

Line 6, delete "said", two places, and substitute, --the--.

Line 7, delete "said", one place, and substitute, --the--.

IN THE CLAIMS:

1. (Amended) A filter-drier for drying refrigerant circulated in a refrigeration system by removing moisture therefrom, the filter-drier comprising:

[(a)] a casing having an inlet for receiving refrigerant[,] and an outlet for discharging refrigerant, the casing including opposed end portions and an intermediate portion disposed between said end portions and having an inner surface;

[(b)] a molded core formed from dessicant and a binder and being disposed in said casing between said inlet and outlet and having an outer surface and receiving flow of refrigerant therethrough; and

[(c)] holding means between the casing inner surface and said core outer surface for holding the core in place the holding means including at least one preformed protrusion on the casing engaging the outer surface of the core to inhibit axial movement of the core.

3. (Amended) [A filter-drier as defined in claim 1, wherein:] A filter-drier for drying refrigerant circulated in a refrigeration system by removing moisture therefrom, the filter-drier comprising:

a casing having an inlet for receiving refrigerant and an outlet for discharging refrigerant, the casing including opposed end portions and an intermediate portion disposed between said end portions and having an inner surface;

a molded core formed from dessicant and a binder and being disposed in said casing between said inlet and outlet and having an outer surface and receiving flow of refrigerant therethrough; and

holding means between the casing inner surface and said core outer surface for holding the core in place, the holding means [includes] including bonding means between the inner surface of the casing and the outer surface of the core to inhibit axial movement of the core, the bonding means being provided by the dessicant core binder.

4. (Amended) A filter-drier as defined in claim [2] 1, wherein:

the protrusion is circular and extends into the outer surface of the core.

5. (Resubmitted) A filter-drier as defined in claim 1, wherein:

the casing includes a cylindrical intermediate portion and the opposed end portions are funnel shaped.

6. (Amended) A filter-drier as defined in claim 1, wherein:

the casing includes a cylindrical portion; and

the core includes a cylindrical portion.

7. (Resubmitted) A filter-drier as defined in claim 1, wherein:

the core includes a frusto-conical portion and a passage having a closed end proximate the inlet and an open end portion proximate the outlet.

8. (Amended) A filter-drier as defined in claim [7] 6, wherein:

the cylindrical portion of the core is bonded to the cylindrical portion of the casing by the molded core binder.

9. (Amended) A filter-drier as defined in claim 1, wherein:

the core is formed from molded desiccant and a binder, the binder providing at least part of the holding means bonding the core to the casing.

11. (Amended) A method of manufacturing a filter-drier as defined in claim [9] 10, comprising the additional step of:

forming the core with a passage having a closed end adjacent the inlet and an open end adjacent the outlet.

13. (Amended) A method of manufacturing a filter-drier having a tubular casing and a desiccant core between an inlet and an outlet comprising the steps of:

dividing an elongate tube into sections;
forming indentations in each [sections] section;
cutting each section to provide a plurality of tubular casings,
having opposed ends; and
molding a desiccant core within each tubular casing to
conform to the configuration of the indentation.

14. (Amended) A method of manufacturing a filter-drier as defined in claim 13, comprising the additional step of:

reducing at least one of the ends of each tubular section by
metal spinning into a funnel shaped configuration.

ABSTRACT OF THE DISCLOSURE

ab This filter-drier for removing moisture from a refrigerant includes a casing having an inlet for receiving refrigerant, an outlet for discharging refrigerant and a molded core, formed from dessicant and a binder, and disposed in the casing between the inlet and the outlet and receiving refrigerant flow therethrough. The molded core includes an outer surface at least in part engaging the inner surface of the casing. The core is held within the casing against axial movement by bonding with the casing or by an indentation protruding into the core or both.
